

The classification presents a few innovations as regards the relative rank and limitations of certain of the higher groups, where a few new names are introduced, and a few changes are made in the nomenclature of genera and species. The class Aves is divided into four subclasses, as already indicated, three of them consisting entirely of extinct types, while the fourth (*Eurhipiduræ*) includes all the living representatives of the class and their more closely allied extinct forms. This latter subclass is divided into three 'super-orders' and eighteen 'orders.' The work begins with the 'lower' or more generalized forms, as the *Archæopteryx* and Toothed Birds, and closes with the *Passeres*. It is illustrated with 25 full-page plates and 273 cuts in the text, not a few of the latter being anatomical.

Lack of space forbids a detailed review, quotations, or extended criticism.

In the matter of editorship, we may remark that the passage from one group to another is often obscurely indicated, which a more formal use of subheadings would have obviated. While the names of the authors are given on a leaf preceding the title page, there is nothing there or elsewhere to indicate the share of each author's work, except the signatures to the articles, the discovery of which entails a laborious search, as they seem to be inserted on no easily discoverable system. The index, occupying only eight pages, could easily have been considerably extended with profitable results to the reader. On the whole, however, the defects are slight, while the excellences are manifold, and the general plan and execution are admirable. To the general reader the work must long prove a boon, and to the specialist will be hardly less valuable.—J. A. A.

**Brewster on 'Bird Migration.'**—Mr. Brewster's important memoir\* of 22 pages, forming No. I of the 'Memoirs of the Nuttall Ornithological Club,' consists of two papers relating to the subject of bird migration. The first (read at the last meeting of the American Ornithologists' Union, and here first published) is a detailed account of the author's observations made at the Point Lepreaux Lighthouse, where he spent the interval from Aug. 13 till Sept. 26, 1885, for the purpose of studying the movements of the birds on their autumnal journey southward. The locality and other circumstances proved exceedingly favorable for observing the behavior of birds under the fascination of a powerful light, and their manner of 'striking' these fatally alluring objects is well detailed, the narrative adding much to our knowledge of a matter previously little understood. The second part of the memoir deals with the general

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\* Memoirs of the Nuttall Ornithological Club. | — | No. I. | — | Bird Migration. | By William Brewster. | Contributed by courtesy of the American Ornithologists' Union's Committee on the | Migration and Geographical Distribution of North American Birds. | Part I.—Observations on Nocturnal Bird Flights at | the Lighthouse at Point Lepreaux, Bay of | Fundy, New Brunswick. | Part II.—Facts and Theories respecting the general | subject of Bird Migration. | — | Cambridge, Mass. | Published by the Club. | March, 1886. Imp. 8vo, pp. 22.

subject of bird migration, its causes and methods, based on the writer's long experience and mature reflection. The 'facts' here presented are of highest interest; the theories and suggestions, while original as regards their presentation in the present connection, are but to a small extent novel, and in the main confirmatory of hypotheses previously suggested; but for this reason they lose none of their interest or value. The paper is not only an able presentation of the subject in its general aspects, but is a valuable contribution to this interesting subject, through the presentation of much new and valuable matter.—J. A. A.

**Minor Ornithological Publications.**—The 'American Naturalist,' Vol. XIX, 1885, contains, besides extracts and abstracts from other publications, the following (Nos. 1037-1041):

1037. *A Crow* [*Corvus americanus*] *Cracking Clams*. By S. Lockwood. *American Naturalist*, Vol. XIX, April, 1885, p. 407.—By dropping them on a fence.

1038. *The Turkey Buzzard breeding in Pennsylvania*. By Witmer Stone. *Ibid.*, p. 407.—Several instances of its breeding in Chester County recorded.

1039. *Birds out of Season—a Tragedy*. By Charles Aldrich, *Ibid.*, May, 1885, pp. 513, 514.—A Chewink (*Pipilo erythrophthalmus*), wintering at Webster, Ia., was finally killed by a Blue Jay, after it had for weeks braved a temperature of  $-20^{\circ}$  to  $-35^{\circ}$ .

1040. *Harelda glacialis at New Orleans*. By G. Kohn. *Ibid.*, Sept. 1885, p. 896.—An old male in winter plumage was shot on Lake Catherine Feb. 28, 1885.

1041. *The Problem of the Soaring Bird*. By I. Lancaster. *Ibid.*, Nov. and Dec. 1885, pp. 1055-1058, 1162-1171.

'Science,' Vols. V and VI, 1885, contains the following (Nos. 1042-1054):

1042. *The coming of the robin and other early birds*. By Dr. C. Hart Merriam. *Science*, Vol. IV, pp. 571, 572.—On the arrival of the Robin (*Merula migratoria*) at various places in North America in the spring of 1884, and a summary statement of the average dates of arrival of various other species in the latitude of New York City and Southern Connecticut.

1043. *A second phalanx in a carinate bird's wing*. By Dr. G. Baur. *Ibid.*, V, May 1, 1885, p. 355.—"A rudiment of a second cartilaginous phalanx in the third digit" found "in an embryo of *Anas domestica*."

1044. *A complete fibula in an adult living carinate-bird* [*Pandion carolinensis*]. By Dr. G. Baur. *Ibid.*, May 8, 1885, p. 375.

1045. *A complete fibula in an adult living carinate-bird* [*Colymbus septentrionalis*]. By Dr. R. W. Shufeldt. *Ibid.*, June 26, 1885, p. 516.

1046. *Untimely death of a chipping sparrow*. By W. L. Poteat. *Ibid.*, VI, July 24, 1885.—Hung by the neck by becoming entangled in a horse-hair from its nest.

1047. *The Audubon collection of birds presented to Amherst college*. Editorial. *Ibid.*, Aug. 14, 1885, 140.—"There are about six hundred skins